VS

LIMITED CIRCULATION

This paper is not an official document: it is for information only and must not be quoted in any printed publication.

AGRICULTURAL MEMORANDUM No. 984

Agricultural Land Classification-some meteorological aspects of mapping Accumulated Temperature in the revised scheme

by M Field

1. Introduction

The purpose of Land Classification is to provide information on the quality of agricultural land in a form which will be of value to land use planners, agricultural advisers, farmers and others involved in land use decisions. Land is classified according to the extent to which climate, site and soil impose long-term limitations on agricultural use.

In recent years two closely related systems, Agricultural Land Classification (1) and Land Use Capability Classification (2) have been used for assessing the quality of agricultural land in England and Wales. The revised system updates the existing Agricultural Land Classification and incorporates the main features of Land Use Capability Classification (3).

It has been agreed that one of the climatic limitations in the revised ALC scheme will be assessed in terms of Accumulated Temperature (see Ag.Mem 922 for further discussion) as follows,

(a) The base is 0 deg C; accumulations are made above this base (units: degree-days)

(b) accumulations are made each year from 1st January to 30th June inclusive for the 20-year period 1961-80.

(c) the median value is selected from the 20 annual values. This is reduced to Mean Sea Level.

The median is used rather than the mean because it is not affected by the values in extreme years. The information is presented in map-form on a scale of 1:625000 (approx 10 miles to the inch) for England and Wales.

2. Mapping-Accumulated Temperature

The method given in Met Office Form 3300 has been adopted (5). This uses daily values of max and min temperature in the following way:-

Case	Accumulation above 0 deg C in degree-days
max $< 0^{o}C$	0
min > 0	mean = (max + min)/2
min < 0 and mean > 0	max/2 + min/4
max > 0 and mean < 0	max/4

(For day n, the max temperature is that recorded at 0900GMT on day $n+1$, and the min temperature is that recorded at 0900 on day n).

Daily calculations are performed from the max and min temperature at station height. When the median value has been found from the 20 annual estimates it is reduced to MSL. The algorithm for this is based on the temperature lapse of 0.6 deg C per 100m applied over the 181 days between 1st January and 30th June. This gives a lapse for accumulated temperature of 108 degree-days per 100m. This is rounded to 1 degree-day per m.

Thus to estimate the accumulated temperature for an arbitrary site at an altitude of X metres the MSL value as deduced from the map is reduced by X degree-days to find the estimated value at actual height.

Ideally the max and min temperature would be reduced to MSL on a daily basis so that the entire calculation is performed at MSL. Using the method described above in which the final value is reduced to MSL small errors can accrue during the winter months when the max and min straddle 0 deg C. However on these occasions the contribution to the Accumulated Temperature is very small compared to the contribution from the summer months when both max and min are above 0 deg C. Thus these errors can be ignored (see Appendix 1).

Initially the Accumulated Temperatures were evaluated for the 94 stations on the 'complete' Agromet Dataset (8). However there were some large 'holes' in the network which needed to be filled. A further 140 climatological stations were selected making 234 in all. Some of the additional sites did not have a full 20-year record and a few sites had less than 5 years. In data-sparse areas these sites were still used to estimate the Accumulated Temperature in the following way:

By plotting the median year(s) on a map it was possible to identify the year(s) in which the median value(s) was likely to occur for a given area. Thus, even if the site had only a few years' data provided the 'median year(s)' was present an estimate could be made (see Appendices II and III for station data).

Isopleths were drawn to the plotted temperatures at 25 degree-day intervals. Several urban sites were removed because they were well-known 'hot spots' (eg Oxford). Whilst these sites may well have been representative of their immediate locality they were not representative of conditions in open, rural countryside and were therefore unsuitable for ALC purposes. Some stations such as Shrewsbury were on the edge of towns and there was a "heat island" effect, albeit a small one, of unknown extent. In these cases a slightly reduced accumulated temperature figure was assumed commensurate with obtaining a smooth and physically understandable pattern of isopleths. Particular care was taken that the figures from coastal sites did not influece the map more than a few miles inland.

See Appendix IV for the map of Accumulated Temperature.

References

1. Agricultural Land Classification 1966, MAFF Technical Report No. 11.

2. Land Use Capability Classification, Bibby J.S. and Mackney D., 1969, Soil Survey Technical Monograph 1.

3. 'Agricultural Land Classification for England and Wales', MAFF, ADAS, December 1982 (unpublished report).

4. 'Land Capability Classification - a new approach? 1. Climatic Limitations', Douglas H A, Agricultural Memorandum No. 922, July 1981.

5. Tables for the evaluation of daily values of Accumulated Temperature above and below 42°F from daily values of maximum and minimum temperature, Meteorological Office, Air Ministry, Form 3300.

6. Urban Climatology and its relevance to Urban design, T J Chandler, WMO Technical Note No. 149, 1976.

7. Boundary Layer Climates, T R Oke.

8. Ag. Memo No. 983 'Creating the "Complete" Agromet Dataset', M Field.

Acknowledgements

My sincere thanks for the support of Mr A Woodcock in producing the map and for the helpful advice of Dr N Thompson and others.

Any comments or suggestions on this paper should be referred to the author.

Meteorological Office, Met O 8a
London Road
BRACKNELL
Berkshire RG12 2SZ

3 October 1983

APPENDIX 1

Error due to reducing the Accumulated Temperature calculated at station height to MSL rather than reducing max and min to MSL first.

Consider the following data for 1 day:

max = 4.5°C altitude = 100m lapse for max = 0.7°C per 100m
min = -0.5°C lapse for min = 0.5°C per 100m
lapse for mean = 0.6°C per 100m

"correct method" max at MSL = 4.5 + 0.7 = 5.2°C
min at MSL = -0.5 + 0.5 = 0.0°C

accumulated temperature at MSL = (5.2 + 0.0)/2 = 2.6 degree-days.

"adopted method" accumulated temperature at station height

= max/2 + min/4
= 2.25 - 0.125 = 2.125

accumulated temperature at MSL = 2.125 + 0.6 = 2.725 degree-days

Difference = 0.125 degree-days

Error in Accumulated Temperature over Jan-June $\doteqdot$ (difference of this order) x (no. of occasions)

$\doteqdot$ 0.125 x 35 = 4 degree-days

APPENDIX II. Station values of Accumulated Temperature for the 94 stations held on the 'Complete Agromet Dataset'

STATION	GRID REF	ALT (M)	MEDIAN ACCU. TEMP. STATION	MSL	MEDIAN YEAR (S)
Aberporth	SN 239 520	133	1413	1546	70/80
Askham Bryan	SE 552 475	34	1359	1393	65/70
Aylesbury	SP 842 114	96	1411	1507	64/71
Boscombe Down	SU 172 403	126	1412	1538	65/80
Bradford	SE 149 352	134	1309	1443	68/70
Bramham	SE 431 412	54	1308	1362	65/68
Bude	SS 208 063	15	1570	1585	71/77
Buxton	SK 059 735	307	1121	1428	65/68
Cambridge BG	TL 456 572	12	1488	1500	68/72
Cambridge NIAB	TL 434 604	26	1466	1492	68/80
Cardington	TL 081 464	29	1432	1461	65/68
Carlisle	NY 384 603	26	1344	1370	72/80
Cawood	SE 561 366	6	1361	1367	68/70
Cheltenham	SO 946 218	65	1505	1570	71/80
Cockle Park	NZ 200 912	99	1198	1297	66/70
Coltishall	TG 262 229	17	1393	1410	68/72
Cranwell	TF 003 494	62	1361	1423	65/68
Crumbland	SO 474 024	245	1289	1534	64/65
Cwmystwyth	SN 773 745	301	1158	1459	71/80
Dalefort	SM 823 052	33	1579	1612	64/77
Durham	NZ 267 416	102	1263	1365	66/72
Eastbourne	TV 611 980	7	1565	1572	71/72
East Malling	TQ 708 570	37	1474	1511	64/77
Elmdon	SP 176 839	96	1377	1473	65/68
Everton	SZ 302 937	16	1519	1535	72/77
Faversham	TR 007 593	48	1453	1501	70/73
Fernhurst	SU 908 267	57	1425	1482	73/80
Filton	ST 600 805	59	1502	1561	64/77
Finningley	SK 659 989	10	1476	1486	74/75
Gatwick	TQ 265 407	59	1424	1483	77/80
Gloucester	SO 851 177	23	1582	1605	71/72
Gogerddan	SN 627 836	31	1467	1498	71/73
Gorleston	TG 534 037	4	1381	1385	64/65
Goudhurst	TQ 722 333	85	1399	1484	68/71
Hastings	TQ 809 094	45	1528	1573	71/80
Hawkridge	SS 877 327	314	1197	1511	71/80
Haydon Bridge	NY 838 646	79	1266	1345	65/72
Heathrow	TQ 077 767	25	1585	1610	64/72
Helmshore	SD 774 205	260	1179	1439	71/80
H Mowthorpe	SE 888 685	175	1151	1326	68/80
Hoddesdon	TL 369 106	43	1488	1531	71/72
Hull	TA 084 302	2	1446	1448	65/72
Hurley	SU 823 829	43	1448	1491	68/80
Hurn	SZ 117 978	10	1489	1499	72/73
Keele	SJ 820 446	179	1275	1454	68/80
Kew	TQ 171 757	6	1616	1622	71/72
Kirkham	SD 414 347	24	1366	1390	65/80
Leeming	SE 306 890	32	1357	1389	71

STATION	GRID REF	ALT (M)	MEDIAN ACCU TEMP STATION HEIGHT	MSL	MEDIAN YEAR (S)
Loggerheads	SJ 201 622	210	1218	1428	65/71
L Ashton	ST 537 699	45	1504	1549	68/80
L Sutton	SU 748 467	145	1376	1521	72/80
Lowestoft	TM 543 947	25	1388	1413	75/80
Lyneham	SU 014 793	145	1380	1525	64/65
Lyonshall	SO 339 576	155	1369	1524	65/80
Manston	TR 335 666	44	1462	1506	70/77
Martyr Worthy	SU 517 338	84	1423	1507	64/68
M Batten	SX 492 529	27	1598	1625	71/77
Newport (Salop)	SJ 712 204	64	1360	1424	64/65
Newton Rigg	NY 493 310	171	1222	1393	65/70
Oxford	SP 509 072	63	1517	1580	68/80
Pen-y-Ffridd	SH 563 705	84	1477	1561	70/80
Pershore Coll.	SO 959 449	40	1504	1544	65/80
Porton	SU 210 366	111	1370	1481	65/73
Preston Wynne	SO 565 475	84	1365	1449	65/80
Ringway	SJ 821 849	75	1443	1518	71/80
Rosewarne	SW 643 412	76	1583	1659	71/80
Rothamsted	TL 132 134	128	1351	1479	65/68
Rustington	TQ 048 032	3	1494	1497	72/77
Rhoose	ST 064 679	67	1451	1518	64/71
Santon Downham	TL 813 901	24	1367	1391	65/70
Shawbury	SJ 553 221	72	1371	1443	68/80
Shoeburyness	TQ 948 857	2	1504	1506	77/80
Silpho Moor	SE 957 946	203	1149	1352	72/80
Silsoe	TL 092 358	61	1403	1464	68/72
Skegness	TF 569 631	5	1378	1383	71/72
Slaidburn	SD 717 547	192	1202	1394	65/80
Stansted	TL 531 226	101	1382	1483	72/80
Starcross	SX 972 821	9	1556	1565	71/80
Stratford	SP 164 549	49	1422	1471	64/68
S Bonnington	SK 507 259	48	1400	1448	64/80
Swansea	SS 642 923	10	1600	1610	70/80
Terr.St.Cl.	TF 547 187	3	1402	1405	68/70
Trawscoed	SN 674 736	61	1397	1458	65/80
Valley	SH 310 758	10	1528	1538	70/80
Warsop	SK 591 699	46	1338	1384	65/68
Wattisham	TM 026 514	89	1346	1435	68/71
Wellesbourne	SP 271 565	47	1404	1451	64/68
Wisley	TQ 063 583	35	1497	1532	73/80
Wittering	TF 043 026	73	1409	1482	65/68
Woburn	SP 964 360	89	1383	1472	68/80
Writtle	TL 677 069	32	1431	1463	65/72
Wye	TR 057 469	56	1441	1497	65/70
Wyton	TL 283 745	40	1452	1492	64/65
Yeovilton	ST 551 237	18	1490	1508	69/80

JB

APPENDIX III Station values of Accumulated Temperature for the 140 stations that are not on the 'Complete Agromet Dataset'

STATION	GRID REF	ALT (M)	DATA PERIOD	NO. OF YEARS DATA	MEDIAN YEAR(S)	Median Accu. Temp. STN. HT.	MSL
Aigburth (RTC)	3384 3852	12	1968-80	13	1971	1508	1520
Alwen	2957 3529	335	1961-70, 73-78	16	1975	1069	1404
Bala	2935 3356	163	1970-80	11	1970	1268	1431
Bastreet	2244 765	296	1970, 1972-80	10	1973	1325	1561
Bath	3751 1638	118	1961-1970, 1972-1975	14	1964/65	1470	1588
Binbrook	5195 3958	108	1963, 1964, 67-68, 70-72, 74-75, 77-80	13	1975	1273	1381
Brighton	5313 1040	10	1961-1980	20	1972/70	1563	1573
Botwnnog	2263 3313	34	1961-1974, 1977	15	1977	1439	1473
Bowhill	3428 6278	168	1961-1980	20	1968/71	1186	1354
Brize Norton	4292 2067	81	1968-1980	13	1968	1420	1501
Brooms Barn	3753 2657	75	1965-1980	16	1970/68	1402	1477
Brynamman	2718 2143	183	1970-1980	11	1970	1402	1586
Bwlchgwyn	3236 3520	386	1961-1967, 1969-73, 75-76, 78-80	17	1970	1074	1460
Caistor	5082 4019	21	1966-67, 1972-80	11	1966	1391	1412
Caldecott	4865 2932	53	1961-1980	20	1970/65	1389	1442
Carmarthen	2412 2183	15	1962-1978, 1980	18	1971/80	1467	1482
Ceinws	2759 3061	61	1962-1965, 1967-1975	13	1970/65	1405	1466
Cenarth Mill	2978 2778	282	1968, 1970-71 1973-75	6	1970/68	1161	1443
Chawleigh	2727 1123	168	1978-80	3	1980	1365	1533
Cilfynydd	3099 1939	194	1975-1977	3	1977	1310	1504
Cirencester	4005 2013	135	1962-1973	12	1968/65	1360	1495
Clacton-on-Sea	6172 2143	16	1961-1976, 1978-1980	19	1980	1475	1491
Cleethorpes	5314 4080	7	61-65, 69-73 78-80	14	1972/80	1401	1408
Colwyn Bay	2860 3787	18	1971-1978, 1980	9	1971	1532	1550
Corwen	3048 3398	144	61-66, 68-71, 73-80	18	1968/65	1268	1412
Cromer	6208 3422	54	61-68, 72, 74-78	14	1972/64	1396	1450
Culdrose	1669 264	81	1961-1980	20	1970/71	1543	1624
Cwmystradllyn	2557 3442	204	1975-1980	6	1980	1349	1553
Derby	4359 3367	48	1961-1978	18	1968/64	1486	1534
Downside Abbey	3656 1508	183	1969-1974, 1976, 1978-80	10	1971/72	1357	1540
East Bergholt	6077 2333	5	1961-1967, 1969-1977, 1979	17	1971	1447	1452

STATION	GRID REF	ALT (M)	DATA PERIOD	NO. OF YEAR DATA	MEDIAN YEAR(S)	Median Accu. Temp STN. NT.	MSL
East Dereham	5994 3138	53	1966-1976	11	1968/72	1446	1499.
East Hoathly	5509 1144	38	1964-1978, 1980	16	1971-64	1437	1475
Edenbridge	5492 1472	45	1975, 1977-8, 1980	4	1980/77	1413	1458
Esgairwen Uchaf	2609 2453	332	1970-1973 1975-6	6	1971	1184	1516
Eskdalemuir (S SCREE)	3235 6026	242	1961-1980	20	1965/70	1072	1314
Exeter	3001 0933	32	1961-1980	20	1977/73	1553	1585
Exton	2962 1338	329	1973-1980	8	1980	1251	1580
Falmouth	1802 0325	51	1961-1965, 1967-1978	16	1971/69	1611	1662
Grizedale	3337 4942	91	61,62,64,65, 67-69,71-73, 75,76,78-80	15	1965	1225	1316
Hadlow College	5628 1497	27	1967-1980	14	1977/71	1448	1475
Hampton Loade	3752 2869	70	70,72-75, 77-79	8	1978/70	1392	1462
Harrogate	4303 4579	63	1961-1980	20	1968/70	1287	1350
Hartburn Grange	4407 5185	31	1970-1980	11	1972/71	1273	1304
Hartland Point	2231 1276	93	1961-1972, 1974-1980	19	1970	1497	1590
Hartlepool	4510 5372	9	1961-1980	20	1971/75	1386	1395
Hayling Island	4716 0988	4	1961-1980	20	1970/71	1571	1575
Hereford	3520 2387	51	1971-1978	8	1973/78	1477	1528
Herstmonceaux	5645 1099	18	1977-1980	4	1977	1455	1473
Huddersfield	4163 4165	99	1961-1968, 1970-71, 1973-77	15	1964	1427	1526
Huddersfield (Oakes)	4113 4177	232	1961-1972	10	1970/68	1258	1490
Kielder Castle	3632 5935	201	1961-1979	19	1971	1070	1271
Lake Vyrnwy	3017 3188	303	1961-1980	20	1965/71	1128	1431
Letcombe Regis	4380 1863	107	1961-67, 1973-80	15	1973	1437	1544
Lincoln	4962 3719	6	1961-1980	20	1970/68	1375	1381
Lizard	1700 0119	73	1964,1968,1971, 1974,1976-1980	10	1980/71	1643	1716
Llandrindod Wells	3061 2605	235	1961-1967, 1969-1973	12	1970/71	1311	1522
Llanfair Caerinion	3133 3057	236	1978-1980	3	1980	1314	1550
Llangenny	3241 2184	122	1974,1977, 1979-80	4	1980	1454	1576
Llety-Evan-Hen	2693 2851	290	1961-1976	16	1970/71	1229	1519
Llwynon	3011 2113	241	1961-1970, 1973-4, 1976-8	15	1970	1267	1508
Macclesfield	3911 3741	152	1961-1980	20	1980/71	1357	1509
Malvern	3790 2461	62	1961-1980	20	1964/71	1511	1573
Manchester W/C	3839 3985	69	1975-1980	6	1980	1576	1645
Mansfield	4537 3622	114	1961-1971, 1973-1980	19	1970	1345	1459
Marchmont	3743 6484	152	1961-1965, 1967-1976, 1978-79	17	1975/72	1161	1313

STATION	GRID REF	ALT (M)	DATA PERIOD	NO. OF YEAR DATA	MEDIAN YEAR(S)	Median Accu. Temp STN. HT	MSL
Marlborough	4185 1686	129	1961-2, 1965-1980	18	1980/77	1343	1472
Mickleham	5173 1527	55	1961-1963, 1965-1976, 1980	16	1973/65	1405	1460
Milford Haven CB	1892 2054	37	1965-1980	16	1970/72	1533	1570
Moel Cynnedd	2843 2877	358	1969-1980	12	1980/71	1053	1411
Moor House	3758 5328	556	1961-1979	19	1967	0742	1298
Morecambe	3431 4645	7	1961-1980	20	1970/80	1477	1484
Morley St Botolph	6061 2996	46	1969-1980	12	1970/72	1362	1408
Nettlecombe	3057 1378	96	1969-1980	12	1977/80	1435	1531
Newquay	1812 0614	53	1961-1975, 1978-79	17	1970/73	1648	1701
Newtown Linford	4530 3095	119	1961-1980	20	1971/64	1348	1467
North Heath	5069 1227	21	1969-1979	11	1970	1499	1520
Okehampton	2585 0928	372	1977-1980	4	1977	1178	1550
Orielton	1953 1992	61	1965-67, 1970, 1974-75, 1977-80	10	1980	1506	1567
Oswestry	3279 3295	174	1961-1972, 1974-1980	19	1970/65	1327	1501
Penkridge	3920 3116	101	1961-1965, 1967-1980	19	1980	1341	1442
Penmaen	2531 1889	87	1968-1980	13	1977/70	1489	1576
Penzance	1469 0302	19	1961-1980	20	1971/80	1712	1731
Pickering	4795 4842	44	1963-1980	18	1968/75	1281	1325
Plumpton	5356 1135	76	1968-1971, 1973-1977, 1979	10	1970/71	1494	1570
Pontefract	4453 4211	78	1961-1975, 1977-78	17	1968	1367	1445
Porthcawl	2822 1771	6	1961-66, 1971-73, 1976-77, 1979-80	13	1980	1597	1603
Preston Montford	3432 3144	67	1977, 1978, 1980	3	1980	1405	1472
Preston (Moor Park)	3537 4311	33	1961-1980	20	1980/68	1419	1452
Raunds	4991 2721	59	1961-1980	20	1964/80	1416	1475
Redesdale	3835 5955	238	1971-72, 1974, 1976-1980	8	1980/72	1015	1253
Rhyl	3002 3807	9	1961-1974	14	1970/71	1504	1513
Rodney Stoke	3488 1501	40	1965-1980	16	1965/71	1489	1529
Rogate	4809 1237	64	1970, 1974-76, 1978, 1979	6	1970	1450	1514
Rugby	4507 2749	116	1961-64, 1971 1973-74, 1976-80	12	1980/71	1369	1485
Ryde	4597 0928	4	1961-1980	20	1973/64	1619	1623
St Austell	2041 0532	94	1961, 1963-65, 1968-75	12	1970/65	1575	1669
St Catherines Point	4498 0753	16	1964-1968, 1970-1980	16	1980/77	1540	1556
St Helens	3488 3938	76	1974-1980	7	1980	1467	1543
St Mawgan	1873 0642	103	1961-1980	20	1873/70	1558	1661

STATION	GRID REF	ALT (M)	DATA PERIOD	NO. OF YEAR DATA	MEDIAN YEAR(S)	Median Accu. Temp STN. HT	MSL
Sandown	4604 0846	4	1961-1969, 1971-1980	19	1964	1600	1604
Seahouses	4219 6322	11	1965-1972, 1974-1979	14	1975/68	1241	1252
Sellafield	3027 5032	13	1961-65, 1968-69, 1971-73, 1975-76 1978-80	15	1971	1398	1411
Shanklin	4581 0808	55	1961-1978, 1980	19	1977	1527	1582
Sheffield	4339 3873	131	1961-1971, 1973-1981	19	1980	1425	1556
Sheffield (Dore)	4309 3817	206	1977-1980	4	1980	1308	1514
Shinfield	4734 1686	61	1961-1970, 1972-1975	14)	1964/68	1495	1556
Shinfield (NIRD)	4729 1684	62	1976-1979	4)			
Shrewsbury	3517 3136	55	1961-1977, 1979-80	19	1970	1439	1494
Sidmouth	3124 0873	10	1961-63, 1965, 1967-69, 71-73, 77-80	14	1971/80	1570	1580
Slapton	2824 0449	32	1961-62, 1964-76, 1978-80	18	1971/64	1622	1654
Southampton (Mayflower Pk)	4416 1112	3	1961-80	20	1980/68	1939	1642
Southport	3371 4207	5	1961-1978	18	1971/1968	1374	1379
Southsea	4637 0991	2	1961-1970, 1972-1980	19	1970	1640	1642
Squires Gate	3316 4316	10	1961-1980	20	1971/80	1420	1430
Swanage	4030 0794	11	1961-1971, 1973-1980	19	1970	1586	1597
Swyddffynnon	2696 2655	179	1961-1973	13	1973/71	1345	1524
Tavistock	2482 0748	139	1962-1975	14	1970/71	1488	1627
Teignmouth	2941 0728	3	1961-1973, 1975-1979	18	1972/68	1623	1626
Tenby	2129 2001	5	1978-1980	3	1980	1501	1506
Thorney Island	4761 1023	16	1961-1976	16	1964/1970	1561	1577
Torbay (Torquay)	2909 0638	8	1961-1970, 1972-1980	19	1977	1673	1681
Totnes	2797 0629	85	1970-71, 1973	3	1970	1558	1643
Trawsfynydd	2695 3390	193	1967-1976, 1978 1980, 1981	13	1973	1346	1539
Tregaron	2669 2625	178	1975-1980	6	1980/77	1303	1481
Usk	3370 2018	21	1961-1966, 1968-69, 1973-75, 1977-79	14	1968/77	1451	1472
Ventnor	4556 0777	135	1961-1965, 1967-1978	17	1970	1552	1687
Waddington	4988 3653	68	1961-1980	20	1974/65	1368	1436
Wallingford	4618 1898	48	1961-1980	20	1968/1973	1431	1479
Walsall	4058 3010	163	1961-1976	16	1965	1367	1530
Watnall	4503 3458	117	1961-1980	20	1964/65	1390	1507
West Raynham	5847 3245	73	1961-67	7	1964	1320	1393

STATION	GRID REF	ALT (M)	DATA PERIOD	NO. OF YEAR DATA	MEDIAN YEAR(S)	Median Accu. Temp STN. HT	Median Accu. Temp MSL
Weymouth	3661 0795	23	1970, 1972-1980	10	1977/70	1577	1600
Whitchester	3721 6589	255	1963-1980	18	1975/80	1051	1306
Whiteford Burrows	2438 1941	5	1969-70, 1976-80	7	1980/70	1563	1568
Wincanton	3704 1286	113	1962, 1964-1975, 1980, 1977	15	1980/72	1432	1545
Winfrith	3820 0870	26	1963-1981	19	1977	1520	1546
Wingerworth	4378 3665	116	1969-1980	12	1980/72	1278	1394
Worthing	5160 1035	2	1961-1970 1973-1980	18	1977/70	1551	1553

Appendix 4 Median values of accumulated temperature (in degree-days) above 0 °C from January to June 1961—1980, at mean sea level.